

Appl. No. : 10/615,336
Filed : July 8, 2003

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1-11 (Canceled).

Claim 12 (**Previously presented**): The socket liner of Claim 25 or 28, wherein the sensor is an oxygen sensor.

Claim 13 (**Previously presented**): The socket liner of Claim 25 or 28, wherein the sensor is a pressure sensor.

Claim 14 (**Canceled**).

Claims 15-17 (Canceled).

Claim 18 (**Currently amended**): The socket liner of claim 24, wherein the sensor wraps around ~~a bottom~~ of the inner layer.

Claims 19-23 (Canceled).

Claim 24 (**Currently amended**): A socket liner for receiving a limb of an amputee, the socket liner comprising:

a liner in the shape of a tubular body having a longitudinal axis that extends from a closed distal end of the liner to an open proximal end of the liner, wherein:

the liner is generally symmetrical about the longitudinal axis,

the liner has having an inner and an outer layer, and wherein

the outer layer serves to provide an interface between the inner layer and a socket; and

a physiological sensor configured to receive data from a limb regarding its physiological characteristics;

the sensor being positioned in a channel formed between the liner inner layer and the liner outer layer;

the sensor including an extending portion that extends outwardly from the open proximal end of the liner in a generally longitudinal direction;

the sensor being in communication with a transmitter; and

the transmitter configured to send data to a receiver to allow an end user to analyze the physiological characteristics of the limb.

Claim 25 (**Previously presented**): A socket liner for receiving an amputated limb of an amputee, the socket liner comprising:

an inner liner layer having an interior surface and an exterior surface and having a generally sock-like or sleeve-like configuration to receive, on the interior surface, the amputated limb;

an outer liner layer having an interior surface and an exterior surface and having a configuration generally matching that of the inner liner layer, the exterior surface of the outer liner layer receiving a socket ~~the socket~~; and

at least one sensor configured to receive data from the amputated limb regarding its physiological characteristics, the sensor disposed between the exterior surface of the inner liner layer and the interior surface of the outer liner layer, wherein the sensor is disposed in a channel formed between the exterior surface of the inner liner layer and the interior surface of the outer liner layer, and wherein the sensor includes an extending portion that extends outward from an inner liner layer opening in a generally longitudinal direction.

Claim 26 (Canceled).

Claim 27 (**Currently amended**): The socket liner of Claim 25, wherein the sensor ~~wraps~~ is positioned along a first side of the inner liner layer, around a bottom portion of the inner liner layer, and along a second side of the inner liner layer, the second side of the inner liner layer being opposite the first side of the inner liner layer.

Claim 28 (**Currently amended**): A socket liner for receiving an amputated limb of an amputee, the socket liner comprising:

a liner body having a generally sock-like or sleeve-like configuration and having an interior surface and an exterior surface;

the interior surface configured to receive the amputated limb;

Appl. No. : 10/615,336
Filed : July 8, 2003

the exterior surface having a configuration generally matching that of the interior surface and configured to receive a socket ~~the socket~~; and

~~at least one sensor~~ a plurality of sensors configured to receive data from the amputated limb regarding its physiological characteristics, the sensor disposed between the exterior surface of the liner body and the interior surface of the liner body, ~~wherein the sensor is disposed in a channel formed between the exterior surface of the liner and the interior surface of the liner~~ and wherein the sensors comprise elongate strips positioned along a longitudinal axis of the liner body and disposed substantially around a circumference of the liner body.

Claim 29 (Canceled).

Claim 30 (**Currently amended**): The socket liner of Claim 28, wherein the sensor wraps around a bottom portion of the interior surface of the liner body.

Claim 31 (**Currently amended**): The socket liner of Claim 28, wherein the sensor is molded into the liner body between the liner body interior surface and the liner body exterior surface.

Claims 32 - 37 (Canceled).

Claim 38 (**New**): The socket liner of Claim 24, wherein the extending portion of the sensor is more rigid than other portions of the sensor.

Claim 39 (**New**): The socket liner of Claim 24, further comprising a short sensor that is positioned in a second channel formed between the liner inner layer and the liner outer layer, wherein the short sensor does not extend from the open proximal end of the liner.

Claim 40 (**New**): The socket liner of Claim 28, wherein the sensor includes an extending portion that extends outward from a liner body opening.

Claim 41 (**New**): An apparatus comprising:

an inner liner configured to receive a residual limb of an amputee, wherein the inner liner has the shape of a tubular body with a longitudinal axis that extends

from a closed distal end of the inner liner to an open proximal end of the inner liner, and wherein the inner liner is generally symmetrical about the longitudinal axis;

an outer liner positionable over the inner liner to define a liner body, the outer liner having an exterior surface configured to receive a socket thereover, such that the outer liner forms an interface between the inner liner and the socket; and

a plurality of sensors configured to receive physiological data from the residual limb, the sensors comprising elongate strips positioned along a longitudinal axis of the liner body and disposed substantially around a circumference of the liner body.

Claim 42 (New): The apparatus of Claim 41, wherein the sensor is an elongate strip configured to be wrapped around a portion of the inner liner.

Claim 43 (New): The apparatus of Claim 41, further comprising a plurality of sensors configured to receive physiological data from the residual limb.

Claim 44 (New): The apparatus of Claim 41, further comprising an adhesive disposed between the inner liner and the outer liner.

Claim 45 (New): The apparatus of Claim 41, further comprising a transmitter configured to send data to a receiver to allow an end user to analyze physiological characteristics of the residual limb.

Claim 46 (New): The apparatus of Claim 41, wherein the sensor is selected from the group consisting of an oxygen sensor and a pressure sensor.

Claim 47 (New): An apparatus for monitoring amputee progress, comprising:

a liner having an inner layer and an outer layer, wherein the liner inner layer is configured to receive a residual limb of an amputee, the outer layer being coupleable with a socket;

a plurality of sensors, each sensor being formed as an elongate strip and being able to sense physiological characteristics of the residual limb along substantially its entire length, the sensors being disposed between the inner liner layer and outer liner layer such that the two layers are substantially laminated to each other, the elongate sensors being disposed longitudinally along the body of the liner substantially about the circumference of the liner; and

a transmitter configured to send data to a receiver to allow an end user to analyze the physiological characteristics of the residual limb.

Claim 48 (New): The apparatus of Claim 47, wherein the sensors are in a channel formed in one layer such that the other layer is laminated to that layer except where the sensor is located.

Claim 49 (New): The apparatus of Claim 47, wherein the sensors are integrated into a wall of the liner.

Claim 50 (New): The apparatus of Claim 47, wherein at least one sensor extends along a closed distal end of the liner to correspond to the distal end of the residual limb.

Claim 51 (New): The apparatus of Claim 47, wherein at least one of the sensors is selected from the group consisting of an oxygen sensor and a pressure sensor.

Claim 52 (New): The apparatus of Claim 47, further comprising a supplementary physiological sensor incorporated into the socket.

Claim 53 (New): The apparatus of Claim 47, wherein at least one of the elongate strips has a portion folded back onto itself.